

Pharmacy Needle and Syringe Survey, New South Wales 2006–2008

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MONOGRAPH 2/2010

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Key findings

- In 2008, respondents reported an average age of 35 years. About two-thirds were male, over 80% were heterosexual and about 20% were Aboriginal. While this demographic profile is largely similar to that of samples of people who inject drugs recruited from needle and syringe programs (NSPs), it appears that more respondents in our sample reported being Aboriginal.
- In 2008, 64% of respondents reported that they had obtained sterile needles and syringes both from a pharmacy and an NSP in the previous month. However, about one in five (22.1%) reported that they had purchased them exclusively at a pharmacy. This varied by region, with more respondents in western Sydney (32.1%) and south-west Sydney (24.6%) than in other areas reporting having purchased them exclusively at a pharmacy.
- In 2008 almost a third (30.2%) of respondents said they had distributed sterile needles and syringes to others in the previous month. Of those who had done so, about half (50.9%) said they had distributed them to two to four other people, and over a quarter (27.3%) had distributed them to five or more other people.
- In 2008 over half (55.2%) of respondents reported that they had injected daily or more frequently in the previous month. The drug most commonly recently injected was heroin (by 53.7%), followed by meth/amphetamine (21.4%) and methadone (8.8%). Between 2007 and 2008 there was a decline in the use of meth/amphetamine; 37.9% of respondents reported using it in 2007 and 21.4% in 2008. There was also a concurrent increase in the use of heroin; 41.8% of respondents used it in 2007 and 53.7% in 2008. This rapid increase in heroin use was largely due to reported changes in two regions, the Newcastle/Hunter and south-west Sydney.
- In 2008 almost a third (32.4%) of respondents reported that they had reused a needle and syringe already used by someone else in the previous month, and nearly half (48.4%) reported having reused or shared ancillary injecting equipment such as spoons, water, filters, tourniquets or drug solution.
- In 2008 just over half (54.2%) of respondents reported that they had had a recent test (in the previous 12 months) for hepatitis C, and just over a quarter (25.9%) had been tested but not in the previous 12 months. Of those who had been tested, 48.1% reported that they were hepatitis C positive.
- In 2008 self-reported HIV prevalence was very low among pharmacy clients at about 2%. Over half of respondents (55.5%) reported having had a recent HIV test, almost a quarter (22.1%) had been tested but not in the previous 12 months, and 14.6% had never undertaken a test.

Recommendations

We make the following recommendations as a result of the findings of this survey:

1 Provide an adequate supply of sterile needles and syringes and improve clients' access to them

The findings show that a high proportion of pharmacy clients engage in receptive sharing of needles and syringes, suggesting that they may not be getting the supply of sterile needles and syringes they need for safe injecting.

We recommend that ways to improve pharmacy clients' access to and use of sterile needles and syringes be considered. These could include education for pharmacy clients (see below) but should also include consideration of structural barriers to their access to equipment, such as the requirement to return used needles before obtaining new ones. We recommend conducting research and consultation in order to carefully consider the feasibility and implications of, and degree of support for, removing the requirement to exchange needles and syringes at pharmacies.

2 Provide an adequate supply of ancillary injecting equipment

The findings show that a high proportion of pharmacy clients share and/or reuse ancillary injecting equipment such as spoons, water, filters, tourniquets or drug solution.

We recommend that mechanisms to improve access to and use of sterile ancillary equipment among pharmacy clients be considered. These may include packaging ancillary equipment with the needles and syringes currently distributed at pharmacies to be exchanged at no cost or at a subsidised rate, or providing ancillary equipment in separate packets to be available at no cost or at subsidised rates.

3 Educate pharmacy clients about health services for those who inject drugs and link them to these services

The findings indicate that a high proportion of pharmacy clients have not recently been tested for blood-borne viruses and may never have had treatment for their drug use

(despite findings that the average duration of injecting was 16 years and that more than half of respondents reported injecting daily or more often).

In partnership with the NSW Users and AIDS Association (NUAA) and the professional pharmaceutical organisations, we recommend that ways to educate pharmacy clients about where and how to seek testing and treatment be considered.

4 Provide training for pharmacy staff

The low rates of recent testing for blood-borne viruses and treatment for drug use among pharmacy clients may identify a need for pharmacy staff to provide more counselling to clients about where and how to seek testing and treatment.

We recommend that, in partnership with NUAA and other stakeholders, the professional pharmaceutical organisations consider expanding the scope of current professional training programs to cover education about services provided by NSPs. Such training may include skills in first engaging clients when they visit the pharmacy, since research shows that pharmacy clients are attracted to pharmacies precisely because of the anonymity and quick transaction they provide. Any reconsideration of professional training should be based on information from pharmacists themselves about what training they would need to support drug-using clients.

5 Provide specialised education and training for pharmacy staff in certain suburban or regional areas

The findings show that the extent to which clients use pharmacies varies across suburban and regional areas, suggesting that pharmacists and their clients in these areas may benefit from specialised training and education. However, how their needs vary across regions cannot be inferred from the data collected in this study.

We recommend that further research be conducted to describe the specific needs of pharmacists and clients in suburban and regional areas.

6 Conduct periodic behavioural surveillance at pharmacies

The findings indicate that a considerable proportion of respondents exclusively use pharmacies to obtain sterile needles and syringes, and that this is more often the case in the western and south-western areas of Sydney. This group of people who inject may therefore not be captured by existing surveillance studies that recruit respondents from fixed-site NSPs. International evidence shows that, without adequate monitoring and intervention, the prevalence of blood-borne viruses among vulnerable populations can rapidly increase.

We recommend that pharmacies in New South Wales be used to conduct periodic surveillance and collect data about risk behaviours for the transmission of blood-borne

viruses and the prevalence of these infections among their clients who inject drugs.

7 Improve the quality of data on the prevalence of hepatitis C

The data on the prevalence of hepatitis C presented in this report are problematic because they are self-reported.

We recommend that any future behavioural surveillance carried out at pharmacies include blood-spot testing of clients. This would need to be conducted at a subset of randomly selected pharmacies whose staff were willing to be involved.

Introduction

New South Wales has an extensive program for distributing sterile needles and syringes through both the public and private sectors. Public-sector distribution is free of charge and takes place mainly through stand-alone primary outlets or needle and syringe programs (NSPs). These provide sterile needles and syringes and various types of sterile ancillary injecting equipment (such as filters, swabs, tourniquets and water ampoules). They also provide clients with advice about safe injecting and referrals to other services. Distribution via the public sector also occurs to a lesser extent through emergency wards, community and sexual health centres, mobile distribution programs, and automated dispensing machines. Private-sector distribution takes place through community-based pharmacies by means of a scheme organised and administered by the New South Wales branch of the Pharmacy Guild of Australia. Unique to New South Wales, this scheme allows clients to purchase packets of sterile needles and syringes which can subsequently be exchanged for new packets at no cost. The costs of these needles and syringes and pharmacists' professional fees are covered by the New South Wales Department of Health (NSW Health, 2006). In 2005 approximately eight million sterile needles and syringes were distributed through various programs in New South Wales (Black et al., 2007), with about three-quarters distributed through public-sector NSPs and one-quarter through pharmacies.

In New South Wales most of what is known about the risk practices of people who inject drugs, and are thereby at risk for either acquiring or transmitting blood-borne viruses, comes from data collected largely from clients of NSPs. Australia has high-quality ongoing surveillance information from the Australian Needle and Syringe Program (NSP) Survey (NCHECR, 2009a) and the Illicit Drug Reporting System (Black et al., 2007) about those who attend these programs. However, we do not know to what extent those who visit pharmacies are, first, a group of users distinct from those who visit NSPs or, second, whether they have different levels of knowledge about blood-borne viruses or risk practices for the acquisition of these viruses while injecting. This is particularly relevant considering the large volume of needles and

syringes distributed through New South Wales pharmacies, which means that a sizeable segment of the injecting population could be excluded from existing surveillance methods.

Australian and international evidence suggests that different distribution points for sterile needles and syringes can attract people with different risk profiles for the acquisition of blood-borne viruses. Australian research indicates that those who commonly attend NSPs are more likely to report severe drug problems and a higher prevalence of infection with blood-borne viruses, but are no more likely to report having shared needles and syringes than those who do not attend NSPs (Cao & Treloar, 2006). Also, injecting drug users who primarily use pharmacies have been found to share ancillary injecting equipment more often, but are not more likely to share needles and syringes (Thein et al., 2003; Bryant & Treloar, 2006), although this is not the case in Western Australia where injecting drug users recruited through pharmacies report higher rates of receptive syringe sharing than those recruited from treatment agencies (Lenton et al., 2000; Lenton & Tan-Quigley, 1997). The international evidence suggests that injecting drug users recruited from pharmacies have a lower risk profile than needle-exchange clients; they are less likely to have been recently incarcerated, more likely to be employed and no more likely to engage in receptive needle sharing (Miller et al., 2002; Moatti et al., 2001; Riley et al., 2000).

This report presents data collected as part of a periodic cross-sectional study of people who used community-based pharmacies to obtain sterile needles and syringes for the period 2006 to 2008. Specifically, it presents data about:

- demographic profile of respondents
- patterns of acquisition of sterile needles and syringes
- recent drug use
- self-reported incidence of risk practice for the transmission of hepatitis C and HIV
- self-reported rates of testing for hepatitis C, HIV and hepatitis B
- self-reported status of hepatitis C, HIV and hepatitis B

Method and sample

Data collection

The sampling for this project was conducted in two stages: 1) the selection and recruitment of pharmacies and 2) the recruitment of people who inject drugs. Pharmacies were selected using stratified sampling by region, from areas defined by the former regions of the New South Wales area health services. In 2006, pharmacies were selected only from the south-east Sydney region. In 2007 and 2008 the study area was expanded to include the five regions with the highest volume distribution of sterile needles and syringes in the state: south-east Sydney, south-west Sydney, central Sydney, western Sydney, which between them encompass nearly all of metropolitan Sydney, and the Newcastle/Hunter Valley region located about 200 kilometres north of Sydney. A list of pharmacies that participate in the New South Wales Pharmacy Guild's exchange scheme was provided by the NSW Department of Health. Within each region pharmacies were ranked by volume of syringe distribution, and those in or above the 75th percentile were invited to facilitate the data collection. Selected pharmacies were mailed a letter of invitation and telephoned one week later to ascertain their willingness to participate. To acknowledge their participation, pharmacists were offered a nominal fee of \$50 plus \$2.50 for each survey they distributed.

During the study period, usually in November of each year, staff at participating pharmacies distributed a self-complete survey to each person who bought or exchanged sterile needles and syringes. This method of distribution was based on a census approach whereby every person within a given time period was offered the opportunity to complete the survey. Surveys were self-administered and could be returned to the pharmacy within the study period and exchanged for \$10.

The survey collected information about demographic profile, patterns of acquisition of sterile needles and syringes, risk behaviours for the transmission of

blood-borne viruses, self-reported testing for hepatitis C and HIV, and whether or not participants tested positive to these infections. Where possible, to allow comparability, the survey used standard items such as behavioural surveillance questions from the Australian NSP Survey (NCHECR, 2009a).

The study had approval from the Human Research Ethics Committee of the University of New South Wales, and the Pharmacy Guild of Australia.

Data analysis

Univariate analyses were conducted on some aspects of the data. Group differences were tested using the χ^2 test for categorical data and the *t*-test for continuous data. Differences over time were tested using the χ^2 test for trend.

Response rates

In 2006, 13 pharmacies in the south-east Sydney area were invited to participate and eight (62%) agreed. We distributed 330 surveys and 255 were returned (a 77% response rate). Twenty-six surveys were deemed invalid because of too much missing data or because they were identified as duplicates, leaving 229 valid surveys. In 2007 the study area was expanded to include the five areas of highest distribution in New South Wales. Fifty-three pharmacies were invited to participate and 36 (67.9%) agreed. We distributed 954 surveys and 750 were returned (a 79% response rate). Ninety surveys were deemed invalid because of missing data or because they were considered to be duplicates, leaving 660 valid surveys. In 2008, 48 pharmacies in the five areas of high distribution were invited to participate and 35 (70.8%) agreed. We distributed 919 surveys and 707 were returned (a 77% response rate). One hundred and five surveys were removed because of missing data or because they were identified as duplicates, leaving 602 valid surveys.

Demographic profile

The demographic profile of respondents was largely similar throughout the three-year period, with respondents reporting an average age of 35 years. About two-thirds were male, around 80% were heterosexual and between 15% and 20% identified as Aboriginal (see Table 1). While this profile is similar in terms of age, gender and sexual identity to that of other samples of people who inject drugs, this sample appears to have a higher proportion of Aboriginal respondents.

Demographic profile varied somewhat by region. For example, in 2008 more respondents from south-west Sydney reported being heterosexual (84.8%) than those from south-east Sydney (76.9%). Also, a high proportion of respondents from the Newcastle/Hunter Valley region reported that they were Aboriginal (25.5%) (see Table 2).

Table 1: Demographic profile, by year

	2006*	2007	2008
Number of pharmacies involved	8	26	34
Number of respondents surveyed	229	660	602
Response rate (%)	77.3	78.6	76.9
Age			
mean	35	35	35
age range	18–58	18–64	18–78
not reported [n (%)]	11 (4.8)	19 (2.9)	20 (3.3)
Gender			
	n (%)	n (%)	n (%)
male	152 (66.4)	399 (60.5)	391 (65.0)
female	71 (31.0)	248 (37.6)	205 (34.1)
transgender	4 (1.7)	10 (1.5)	4 (0.7)
not reported	2 (0.9)	3 (0.5)	2 (0.3)
Sexual identity			
heterosexual	186 (81.2)	533 (80.8)	492 (81.7)
gay/lesbian/bisexual	31 (13.5)	98 (14.9)	83 (10.8)
other	6 (2.6)	16 (2.4)	13 (2.2)
not reported	6 (2.6)	13(2.0)	14 (2.3)
Aboriginal			
yes	44 (19.2)	103 (15.7)	120 (19.9)
no	173 (75.6)	540 (81.8)	468 (77.7)
not reported	12 (5.2)	17 (2.6)	14 (2.3)

*Data collected for south-east Sydney only.

Table 2: Demographic profile, by region, 2008

	Sydney south-east	Sydney south-west	Sydney west	Sydney central	Newcastle/Hunter
Number surveyed	143	138	28	128	165
Age					
mean	36	34	36	38	35
range	18–57	18–60	22–51	20–59	18–78
not reported [n (%)]	8 (5.6)	1 (0.7)	1 (3.6)	2 (1.6)	8 (4.8)
	n (%)	n (%)	n (%)	n (%)	n (%)
Gender					
male	87 (60.8)	96 (69.6)	15 (53.6)	96 (75.0)	97 (58.8)
female	53 (37.1)	41 (29.7)	13 (46.4)	32 (25.0)	66 (40.0)
transgender	2 (1.4)	1 (0.7)	0 (0.0)	0 (0.0)	1 (0.6)
not reported	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)
Sexual identity					
heterosexual	110 (76.9)	117 (84.8)	23 (82.1)	111 (86.7)	131 (79.4)
gay/lesbian/bisexual	27 (18.9)	12 (8.7)	4 (14.2)	12 (9.4)	28 (17.0)
not reported	4 (2.8)	5 (3.6)	0 (0.0)	1 (0.8)	4 (2.4)
Aboriginal					
yes	25 (17.5)	25 (18.1)	6 (21.4)	22 (17.2)	42 (25.5)
no	113 (79.0)	110 (79.7)	21 (75.0)	104 (81.2)	120 (72.7)
not reported	5 (3.5)	3 (2.2)	1 (3.6)	2 (1.6)	3 (1.8)

Findings

Patterns of acquisition of sterile needles and syringes

In 2008, 64% of respondents reported that they had visited both a pharmacy and an NSP in the month prior to the survey (see Table 3), evidence that individuals who inject can use the variety of options available for acquiring sterile injecting equipment. However, about one in five respondents (22.1%) reported that they had visited only pharmacies to obtain sterile needles and syringes in the previous month. This suggests that these people who inject drugs may be excluded from current surveillance mechanisms such as the Australian NSP Survey (NCHECR, 2009a) and the Illicit Drug Reporting System (Black et al., 2007), both of which recruit samples from NSPs. International experience shows that, without adequate

monitoring and appropriate intervention, the number of diagnoses with blood-borne viruses can increase rapidly among populations of injecting drug users. While this more often happens in resource-poor environments (Rhodes et al., 2002; Taha et al., 1998; Weniger et al., 1991), it can also occur in well-resourced settings. A notable example was the experience in Vancouver, Canada, where the prevalence of HIV among people who injected drugs jumped from about 2% in the late 1980s (Strathdee et al., 1997) to about 30% by the late 1990s (O'Connell et al., 2005). This rapid increase occurred despite the early introduction of a needle exchange program with a high distribution rate (Strathdee et al., 1997) and demonstrates the value of adequate monitoring and appropriate intervention even in settings where resources are plentiful.

Table 3: Site of acquisition of sterile needles and syringes, by year

	2006*	2007	2008**
Number surveyed	229	660	602
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Frequency of use of a pharmacy			
not in the previous month	33 (14.4)	89 (13.5)	53 (8.8)
once in the previous month	52 (22.7)	136 (20.6)	3 (0.5)
less than weekly	53 (23.1)	190 (28.8)	10 (1.7)
a couple of times each week	58 (25.3)	167 (25.3)	62 (10.3)
daily or almost daily	25 (10.9)	61 (9.2)	388 (64.5)
not reported	8 (3.5)	17 (2.6)	86 (14.3)
Exclusive use of a pharmacy	65 (28.4)	222 (33.6)	133 (22.1)
Frequency of use of a needle and syringe program			
not in the previous month	80 (34.9)	279 (42.3)	153 (25.4)
once in the previous month	56 (24.5)	126 (19.1)	143 (23.8)
less than weekly	35 (15.3)	107 (16.2)	91 (15.1)
a couple of times each week	37 (16.2)	91 (13.8)	134 (22.3)
daily or almost daily	10 (4.4)	22 (3.3)	47 (7.8)
not reported	11 (4.8)	35 (5.3)	34 (5.6)
Exclusive use of a needle and syringe program	19 (8.3)	32 (4.8)	30 (5.0)
Use of both a needle and syringe program and a pharmacy	119 (52.0)	306 (46.4)	385 (64.0)

*In 2006, data were collected for south-east Sydney only.

**In 2008 the question about frequency of pharmacy visits in the previous month was asked as an open-ended question, in answer to which respondents reported the total number of visits. In 2006 and 2007 the options for responses were closed-ended; respondents had to choose between the categories listed in the table.

Whether or not respondents obtained their sterile needles and syringes exclusively from a pharmacy varied depending on the region. A higher proportion of respondents from western Sydney (32.1%) and south-west Sydney (24.6%) reported exclusive use of a pharmacy to obtain injecting equipment (see Figure 1). This highlights the important role played by pharmacies in suburban regions in supplying sterile injecting equipment to those who inject.

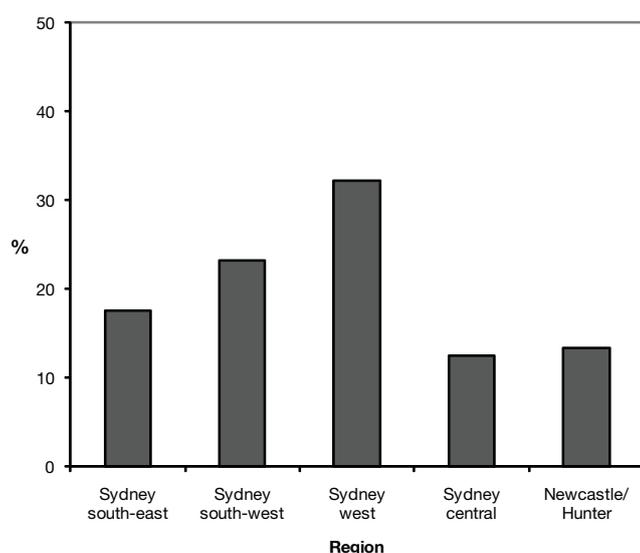


Figure 1: Respondents who obtained sterile needles and syringes exclusively from pharmacies, by region, 2008

There was a decline over the period 2007 to 2008 in the proportion of respondents who reported having exclusively used pharmacies to obtain sterile needles and syringes, from 33.6% to 22.1% (see Table 3). Over the same period there was an increase from 46.4% to 64% in the proportion who reported having used both an NSP and a pharmacy for this purpose. This suggests a shift towards the use of NSPs among pharmacy clients, which might explain the recent

decrease in the level of distribution of sterile needles and syringes from the pharmacy sector in New South Wales. This shift was more prominent in both the central Sydney region, where, for example, the proportion of those who used pharmacies exclusively had almost halved and the proportion of those who used both pharmacies and NSPs had tripled, and the Newcastle/Hunter region (see Table 4). The apparent decline from 2007 to 2008 in exclusive use of a pharmacy may also be attributable to a change in the way this data was collected. In 2008 the question was asked as an open-ended question to which respondents answered with the total number of visits to a pharmacy. In 2007 the options to which they were asked to respond were closed-ended, ranging from 'not in the last month' to 'daily or almost daily'.

Secondary exchange of sterile injecting equipment from pharmacies

In 2008, respondents were asked whether they had distributed sterile needles and syringes obtained from a pharmacy to other people, referred to as 'secondary exchange'. Almost a third (30.2%) reported having done so in the previous month, and almost one in five (18.9%) had done so on a regular basis. Of those who reported this practice, about half (50.9%) said they had distributed sterile needles and syringes to two to four other people, and over a quarter (27.3%) had passed them on to five or more other people. The main reason given (by 43.8%) for having distributed sterile needles and syringes to others was to help others inject safely and avoid hepatitis C, followed by helping others who could not travel (by 28.6%) and helping others who were embarrassed to get them for themselves (12.4%). Of needles and syringes distributed via secondary exchange, the overwhelming majority were given away (by 89% of respondents) at no cost. These data show the extent to which secondary exchange occurs among pharmacy clients in New South Wales as an altruistic practice to help others inject safely or avoid inconvenience and embarrassment.

Table 4: Site of acquisition of sterile needles and syringes, by region, 2007–2008

	Sydney south-east		Sydney south-west		Sydney west		Sydney central		Newcastle/Hunter	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Number surveyed	134	143	149	138	60	28	136	128	181	165
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Exclusive use of a pharmacy	26 (19.4)	30 (21.0)	63 (42.3)	34 (24.6)	22 (36.7)	9 (32.1)	45 (33.1)	23 (18.0)	66 (36.5)	37 (22.4)
Use of both a needle and syringe program and a pharmacy	74 (55.2)	95 (66.4)	69 (46.3)	85 (61.6)	30 (50.0)	16 (57.1)	30 (22.1)	84 (65.6)	78 (43.1)	105 (63.6)

Recent drug use

In 2008, pharmacy clients reported that they had been injecting, on average, for 16 years (range < 1–58) (see Table 5). Over half (55.2%) reported having injected daily or more frequently in the previous month. The drug most commonly recently injected was heroin (by 53.7%),

followed by meth/amphetamine (21.4%) and methadone (8.8%). This drug-using profile is similar to that of respondents to the NSP survey in New South Wales, who report a median duration of injecting of 17 years and 44% of whom inject daily or more frequently. Heroin is also the most commonly reported drug most recently injected (by 39%) followed by meth/amphetamine (26%) and methadone (12%) (NCHECR, 2009a).

Table 5: Duration of injecting, drug most recently injected, frequency of injecting in the previous month, and treatment for drug use in the previous 12 months, by year

	2006*	2007	2008
Number surveyed	229	660	602
Duration of injecting (years)			
mean	15	15	16
range	< 1–39	< 1–44	< 1–58
not reported [<i>n</i> (%)]	16 (7.0)	33 (5.0)	33 (5.5)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Drug most recently injected			
heroin	88 (38.4)	276 (41.8)	323 (53.7)
meth/amphetamine	47 (20.5)	250 (37.9)	129 (21.4)
cocaine	25 (10.9)	34 (5.2)	38 (6.3)
methadone	13 (5.7)	44 (6.7)	53 (8.8)
morphine	n/c	18 (2.7)	22 (3.7)
anabolic steroids	n/c	1 (0.2)	2 (0.3)
Subutex/buprenorphine	n/c	15 (2.3)	5 (0.8)
other**	39 (17.0)	22 (3.3)	15 (2.5)
not reported	3 (1.3)	0 (0.0)	15 (2.5)
Frequency of injecting			
more than 3 times most days	50 (21.8)	118 (17.9)	107 (17.8)
2 to 3 times most days	46 (20.1)	116 (17.6)	110 (18.3)
once a day	42 (18.3)	126 (19.1)	115 (19.1)
more often than weekly but not daily	46 (20.1)	146 (22.1)	118 (19.6)
less often than weekly	31 (13.5)	101 (15.3)	79 (13.1)
not in the previous month	10 (4.4)	40 (6.1)	44 (7.3)
not reported	4 (1.7)	13 (2.0)	29 (4.8)
Injected daily or more often	138 (60.3)	360 (54.6)	332 (55.2)
Had treatment for drug use			
yes, currently	51 (22.3)	272 (41.2)	226 (37.5)
yes, in the past	83 (36.2)	115 (17.4)	134 (22.3)
no, never	84 (36.7)	250 (37.9)	212 (35.2)
not reported	11 (4.8)	23 (3.5)	30 (5.0)
Any public injecting			
yes	108 (49.3)	273 (44.0)	256 (45.9)
no	107 (48.9)	326 (52.6)	274 (49.1)
not reported	4 (1.8)	21 (3.4)	28 (5.0)

*In 2006, data were collected in south-east Sydney only.

**Other includes heroin and cocaine at the same time.

n/c = not calculated (because question format was different in 2006)

The similarities in the drug-using profiles of these two groups of respondents are not surprising considering that almost two-thirds of pharmacy clients report that they have also attended an NSP in the previous month, and may therefore also participate in the annual NSP Survey. However, one of the distinct differences between the two samples was the high proportion in the Pharmacy study (35.2% compared with 14% in the NSP survey) who reported never having received treatment for their drug use (see Table 5). Given the similar drug-using profiles of the two groups—many have been injecting for many years and inject daily or more frequently—this is of concern. While it is an important feature of NSP services to provide and encourage referrals to treatment, pharmacists and their staff do not have formal mechanisms for doing this, and may not know how to advise clients if asked. Increased uptake of treatment for drug use might be achieved among pharmacy clients if pharmacies were provided with accurate information to pass on to their clients about how and where to access treatment. Pharmacy staff would, however, need to be mindful of the reasons for some clients choosing to use pharmacies instead of NSPs. Recent research identifies that some pharmacy clients wish to avoid being monitored and counselled by health workers (Treloar et al., 2010), which makes it important that pharmacy-based educational initiatives be non-invasive. One approach may be to insert discrete information cards inside packets of needles and syringes, or to attach stickers to the outside, to supply information about how and where to get treatment for drug use. Additionally, workforce development programs for pharmacy staff might improve their knowledge of treatments available for drug users. An added benefit of such training may be that more pharmacists would then be willing to administer drug treatment themselves by dosing clients with pharmacotherapy on their premises.

The drug-using profile of respondents varied somewhat according to region. Heroin was the drug most commonly injected in the areas of south-east, south-west and central Sydney and the Newcastle/Hunter, while meth/

amphetamine was the drug most commonly injected in western Sydney (see Table 6).

From 2007 to 2008 there was an overall decline in the use of meth/amphetamine; 37.9% of respondents reported having injected it in 2007 compared with 21.4% in 2008. There was a concurrent increase in the use of heroin; 41.8% reported having used it in 2007 and 53.7% had done so in 2008 (see Figure 2). The sharp increase in the use of heroin was largely due to its increased use

in two regions, the Newcastle/Hunter and south-west Sydney areas. For example, in the Newcastle/Hunter region from 2007 to 2008, heroin use more than doubled (from 22.7% to 46.1%) and there was a concurrent almost halving of methamphetamine use (from 61.3% to 32.1%) (see Table 6). A shift from methamphetamine to heroin injection may bring with it a higher incidence of overdose and thereby increased pressure on ambulance and emergency services.

Table 6: Duration of injecting, drug most recently injected, frequency of injecting in the previous month, and treatment for drug use, by region, 2007–2008

	Sydney south-east		Sydney south-west		Sydney west		Sydney central		Newcastle/Hunter	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Number surveyed	134	143	149	138	60	28	136	128	181	165
Duration of injecting (years)										
mean	15	16	13	16	15	16	16	18	15	15
range	< 1–33	< 1–40	1–38	< 1–58	1–37	6–33	< 1–44	1–42	2–42	1–49
not reported [n (%)]	9 (6.7)	11 (7.7)	6 (4.0)	3 (2.2)	2 (3.3)	1 (3.6)	4 (2.9)	5 (3.9)	12 (6.6)	13 (7.9)
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Drug most recently injected in previous month										
heroin	73 (54.5)	90 (62.9)	76 (51.0)	91 (65.9)	14 (23.3)	4 (14.3)	72 (52.9)	62 (48.4)	41 (22.7)	76 (46.1)
meth/amphetamine	31 (23.1)	17 (11.9)	51 (34.2)	22 (15.9)	32 (53.3)	11 (39.3)	25 (18.4)	26 (20.3)	111 (61.3)	53 (32.1)
cocaine	12 (9.0)	14 (9.8)	4 (2.7)	6 (4.3)	3 (5.0)	5 (17.9)	8 (5.9)	10 (7.8)	7 (3.9)	3 (1.8)
methadone	8 (6.0)	7 (4.9)	11 (7.4)	9 (6.5)	4 (6.7)	5 (17.9)	17 (12.5)	21 (16.4)	4 (2.2)	11 (6.7)
morphine	7 (5.2)	8 (5.6)	1 (0.7)	2 (1.4)	2 (3.3)	2 (7.1)	2 (1.5)	4 (3.1)	6 (3.3)	6 (3.6)
anabolic steroids	0 (0.0)	1 (0.7)	0 (0.0)	2 (1.4)	1 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)
Subutex/buprenorphine	2 (1.5)	0 (0.0)	2 (1.3)	2 (1.4)	4 (6.7)	0 (0.0)	3 (2.2)	2 (1.6)	4 (2.2)	1 (0.6)
other*	1 (0.7)	2 (1.4)	4 (2.7)	4 (2.9)	0 (0.0)	1 (3.6)	9 (6.6)	3 (2.4)	8 (4.4)	5 (3.0)
not reported	0 (0.0)	4 (2.8)	0 (0.0)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (5.4)
Frequency of injecting in previous month										
more than 3 times most days	33 (24.6)	22 (15.4)	24 (16.1)	29 (21.0)	8 (13.3)	5 (17.9)	14 (10.3)	16 (12.5)	39 (21.5)	35 (21.2)
2 to 3 times most days	27 (20.1)	25 (17.5)	22 (14.8)	27 (19.6)	12 (20.0)	3 (10.7)	23 (16.9)	25 (19.5)	32 (17.7)	30 (18.2)
once a day	25 (18.7)	29 (20.3)	30 (20.10)	29 (21.0)	8 (13.3)	5 (17.9)	26 (19.1)	25 (19.5)	37 (20.4)	27 (16.4)
more often than weekly but not daily	23 (17.2)	34 (23.8)	34 (22.8)	19 (13.8)	15 (25.0)	8 (28.6)	39 (28.7)	20 (15.6)	35 (19.3)	37 (22.4)
less often than weekly	17 (12.7)	15 (10.5)	27 (18.1)	17 (12.3)	10 (16.7)	2 (7.1)	18 (13.2)	27 (21.1)	29 (16.0)	18 (10.9)
not in the previous month	8 (6.0)	10 (7.0)	7 (4.7)	11 (8.0)	6 (10.0)	2 (7.1)	14 (10.3)	11 (8.6)	5 (2.8)	10 (6.1)
not reported	1 (0.7)	8 (5.6)	5 (3.4)	6 (4.3)	1 (1.7)	3 (10.7)	2 (1.5)	4 (3.1)	4 (2.2)	8 (4.8)
Injected daily or more frequently	85 (63.4)	76 (53.1)	76 (51.0)	85 (61.6)	28 (46.7)	13 (46.4)	63 (46.3)	66 (51.6)	108 (59.7)	92 (55.8)
Had treatment for drug use										
yes, currently	28 (20.9)	31 (21.7)	25 (16.8)	41 (29.7)	9 (15.0)	9 (32.1)	35 (25.7)	29 (22.7)	18 (9.9)	24 (14.5)
yes, in the past	52 (38.8)	45 (31.5)	63 (42.3)	54 (39.1)	27 (45.0)	11 (39.3)	56 (41.2)	49 (38.3)	74 (40.9)	67 (40.6)
no, never	46 (34.4)	56 (39.2)	58 (38.9)	41 (29.7)	22 (36.7)	7 (25.0)	40 (29.4)	44 (34.4)	84 (46.4)	64 (38.8)
not reported	8 (6.0)	11 (7.7)	3 (2.0)	2 (1.4)	2 (3.3)	1 (3.6)	5 (3.7)	6 (4.7)	5 (2.8)	10 (6.1)
Any public injecting										
yes	67 (53.2)	51 (38.3)	48 (33.8)	67 (52.8)	16 (29.6)	12 (46.2)	61 (50.0)	42 (35.9)	81 (46.0)	84 (54.2)
no	55 (43.7)	74 (55.6)	89 (62.7)	54 (42.5)	36 (66.7)	11 (42.3)	57 (46.7)	71 (60.7)	89 (50.6)	64 (41.3)
not reported	4 (3.2)	8 (6.0)	5 (3.5)	6 (4.7)	2 (3.7)	3 (11.5)	4 (3.3)	4 (3.4)	6 (3.4)	7 (4.5)

Other includes heroin and cocaine concurrently.

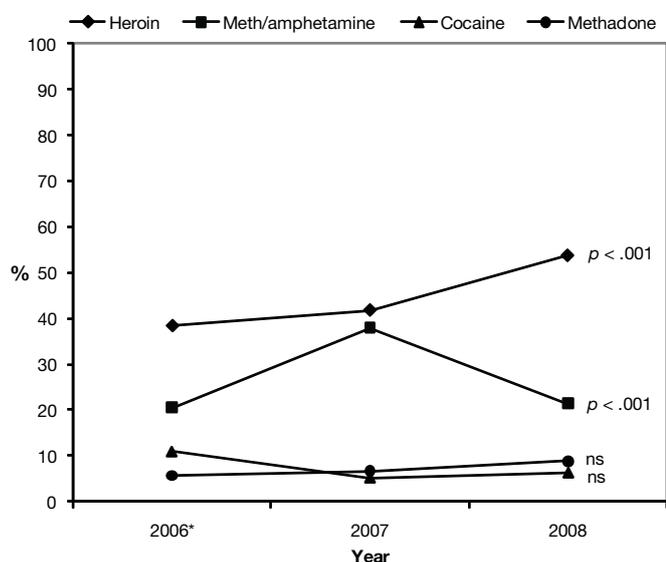


Figure 2: Drug most recently injected, by year

*In 2006, data were collected in south-east Sydney only.

ns = not significant

p-values were calculated to test differences between 2007 and 2008 data.

Risk practice for the transmission of blood-borne viruses

In 2008, injecting practices that posed a high risk for the transmission of blood-borne viruses were common. Over a third (33.6%) of pharmacy clients reported that they had reused another's needle and syringe in the previous month, and about half (50.1%) reported that they had reused or shared ancillary injecting equipment such as spoons, water, filters, tourniquets or drug solution (see Table 7). Indeed, almost two-thirds (59.5%) had reused or shared any kind of equipment (needles and syringes or ancillary equipment), indicating that a high proportion of respondents were at risk for acquiring or passing on hepatitis C. The proportion of respondents engaging in high-risk practices was significantly higher in 2008 than in 2007 (59.5% versus 50.4%, $p < .01$). While this cannot be claimed to be an increasing trend in the prevalence of risk practice, it does show that sharing equipment is common and entrenched among pharmacy clients. Across all three years of the study period a high proportion of respondents reused or shared ancillary

Table 7: In the previous month, reuse of another's needle and syringe and/or ancillary equipment, by year

	2006*	2007	2008	p-value
Number who had injected in the previous month	215	607	529	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Frequency of reuse of another's needle and syringe				
more than 5 times	13 (6.0)	42 (6.9)	43 (8.1)	
3 to 5 times	13 (6.0)	41 (6.8)	45 (8.5)	
twice	18 (8.4)	44 (7.2)	53 (10.0)	
once	24 (11.2)	31 (5.1)	37 (7.0)	
never	145 (67.4)	435 (71.7)	333 (62.9)	
not reported	2 (0.9)	14 (2.3)	18 (3.4)	
Any reuse of another's needle and syringe				
yes	68 (31.6)	158 (26.0)	178 (33.6)	< .01
no	145 (67.4)	435 (71.7)	333 (62.9)	
not reported	2 (0.9)	14 (2.3)	18 (3.4)	
Reuse of particular types of ancillary equipment				
spoon	104 (48.4)	196 (32.2)	199 (37.6)	
water	71 (33.0)	162 (26.7)	146 (27.6)	
filter	49 (22.8)	106 (17.5)	100 (18.9)	
tourniquet	44 (20.5)	73 (12.0)	54 (10.2)	
drug solution/mix	37 (17.2)	80 (13.2)	62 (11.7)	
not reported	n/c	29 (4.8)	19 (3.6)	
Reuse of any ancillary equipment				
yes	141 (65.6)	269 (44.3)	265 (50.1)	.07
no	74 (34.4)	309 (50.9)	245 (46.3)	
not reported	n/c	29 (4.8)	19 (3.6)	
Reuse of any equipment (needle and syringe or ancillary equipment)				
yes	146 (67.9)	306 (50.4)	315 (59.5)	< .01
no	69 (32.1)	293 (48.3)	208 (39.9)	
not reported	n/c	8 (1.3)	6 (1.1)	

*In 2006, data was collected in south-east Sydney only.

n/c = not calculated (because question format was different in 2006)

p-values calculated to test differences between 2007 and 2008.

equipment. This calls for consideration of how to increase the use of sterile ancillary equipment among pharmacy clients. One possibility may be to include it in the packets of needles and syringes currently distributed through New South Wales pharmacies. Pharmacies in other Australian states offer clients a variety of pre-packaged products, some of which include ancillary equipment. However, these products are not available for exchange or at no cost; clients must purchase them. New South Wales pharmacies could continue to offer clients free needles and syringes in exchange for used ones, but also offer clients pre-packaged ancillary equipment at a small or subsidised fee, or on a no-cost exchange basis.

Risk profile varied by region. Receptive needle sharing was most common in the Sydney West region (engaged in by 39.1%) and the least common in south-east Sydney (24.8%) (see Table 8). Rates of sharing of ancillary equipment were largely consistent across regions; about half the respondents reported having shared such equipment regardless of where they lived. The variation in receptive needle sharing between regions highlights the importance of also examining risk practices by region. People who inject drugs in non-metropolitan areas of New South Wales must be adequately provided with sterile needles and syringes. Given that it is not always feasible to provide public-sector, fixed-site NSPs in regional areas, there may be a need to develop needle exchange at pharmacies by increasing the volume of sterile needles and syringes distributed and improving the consistency and quality of education and counselling offered to pharmacy clients. Indeed, pharmacies and their clients in regional areas may benefit from specialised training and

education programs, especially in those areas where there are few public-sector services.

In 2008 the risk profiles of respondents varied. Respondents under 28 years of age were much more likely to reuse needles and syringes than older respondents (see Table 9). Other research also supports the finding that early career or younger injectors are more likely to share needles and syringes (Fuller et al., 2003) and other equipment, possibly because they have less knowledge about where to obtain sterile equipment and how to inject safely. Also, men were significantly more likely to report reusing other people's needles and syringes, as were respondents who injected daily or more frequently.

Of those respondents who had reused another's needle and syringe, 44.2% reported that they had usually done so after one other person, most commonly a regular sexual partner (reported by 42%) (see Table 10). This corresponds with other published research demonstrating that people who inject tend to share equipment with others they know well (Loxley & Davidson, 1998; Loxley & Ovenden, 1995; Rhodes & Quirk, 1998). This is premised on the belief that sharing with others who are 'well known' reduces the risk of acquiring blood-borne viruses. However, the extent to which others are 'well known' tends to be based on how much they are trusted and loved (Dear, 1995; Rhodes & Quirk, 1998) rather than on any forthright discussion of serostatus. Thus, even though the sharing of equipment among pharmacy clients usually takes place with a small number of well-known others, it likely carries a high risk for the transmission of blood-borne viruses.

Table 8: In the previous month, reuse of another's needle and syringe, ancillary equipment, and any equipment, by region, 2007–2008

	Sydney south-east		Sydney south-west		Sydney west		Sydney central		Newcastle/Hunter	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Number who had injected in the previous month	125	125	131	121	57	23	121	113	173	147
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Reuse of another's needle and syringe										
yes	30 (24.0)	31 (24.8)	29 (22.1)	43 (35.5)	15 (26.3)	9 (39.1)	31 (25.6)	39 (34.5)	53 (30.6)	56 (38.1)
no	95 (76.0)	88 (70.4)	95 (72.5)	75 (62.0)	41 (71.9)	13 (56.5)	84 (69.4)	71 (62.8)	120 (69.4)	86 (58.5)
not reported	0 (0.0)	6 (4.8)	7 (5.3)	3 (2.5)	1 (1.8)	1 (4.3)	6 (5.0)	3 (2.7)	0 (0.0)	5 (3.4)
Reuse of ancillary equipment										
yes	55 (44.0)	61 (48.5)	57 (43.5)	64 (52.9)	33 (57.9)	9 (39.1)	73 (60.3)	57 (50.4)	88 (50.9)	75 (51.0)
no	70 (56.0)	60 (48.0)	70 (53.4)	53 (43.8)	24 (42.1)	14 (60.9)	44 (36.4)	52 (46.0)	85 (49.1)	65 (44.2)
not reported	0 (0.0)	4 (3.2)	4 (3.1)	4 (3.3)	0 (0.0)	0 (0.0)	4 (3.3)	4 (3.5)	0 (0.0)	7 (4.8)
Reuse of any equipment (needle and syringe or ancillary equipment)										
yes	46 (36.8)	70 (56.0)	51 (38.9)	75 (62.0)	31 (54.4)	12 (52.2)	63 (52.1)	67 (59.3)	78 (45.1)	91 (61.9)
no	73 (58.4)	54 (43.2)	71 (54.2)	45 (37.2)	24 (42.1)	11 (47.8)	53 (43.8)	44 (38.9)	88 (50.9)	54 (36.7)
not reported	6 (4.8)	1 (0.8)	9 (6.9)	1 (0.8)	2 (3.5)	0 (0.0)	5 (4.1)	2 (1.8)	7 (4.0)	2 (1.4)

Table 9: Reuse of another's needle and syringe, ancillary equipment, and any equipment, by various characteristics, 2008

	Total in each category	Reuse of another's needle and syringe	Reuse or sharing of ancillary equipment	Reuse or sharing of any equipment
Number surveyed		181	270	322
		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Duration of injecting				
less than 3 years	45	13 (28.9)	28 (62.2)	30 (66.7)
3 to 5 years	23	9 (39.1)	14 (60.9)	14 (60.9)
6 to 10 years	105	32 (30.5)	46 (43.8)	56 (53.3)
11 to 20 years	224	67 (29.9)	91 (40.6)	109 (48.7)
over 20 years	172	45 (26.2)	68 (39.5)	87 (50.6)
<i>p</i> -value		ns	.01	ns
Age				
under 28	151	61 (40.4)	78 (51.7)	95 (62.9)
28 to 34	140	38 (27.1)	64 (45.7)	73 (52.1)
35 to 42	149	37 (24.8)	58 (38.9)	69 (46.3)
42 and over	142	35 (24.6)	54 (38.0)	68 (47.9)
<i>p</i> -value		.02	.01	.01
Gender				
male	391	124 (31.7)	176 (45.0)	213 (54.5)
female	205	52 (25.4)	89 (43.4)	103 (50.2)
<i>p</i> -value		.04	ns	ns
Frequency of injecting				
once or more often most days	332	130 (39.2)	194 (58.4)	225 (67.8)
more often than weekly	118	31 (26.3)	47 (39.8)	58 (49.2)
less often than weekly	79	17 (21.5)	24 (30.4)	32 (40.5)
<i>p</i> -value		.001	.001	.001

Note: Percentages are calculated from denominators reported in left-hand column

ns = not significant

Table 10: Number of people who used needle and syringe before respondent, and respondent's relationship to them, by year

	2006*	2007	2008
Number who reused a needle and syringe in the previous month	70	160	181
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Number who used a needle and syringe before respondent			
more than 5 people	8 (11.4)	22 (13.8)	20 (11.0)
3 to 5 people	6 (8.6)	21 (13.1)	21 (11.6)
2 people	8 (11.4)	15 (9.4)	22 (12.2)
one person	25 (35.7)	62 (38.8)	80 (44.2)
don't know how many	0 (0.0)	19 (11.9)	19 (10.5)
not reported	0 (0.0)	21 (13.1)	19 (10.5)
Relationship to person after whom a needle and syringe was used			
regular sex partner	18 (25.7)	77 (48.1)	76 (42.0)
casual sex partner	8 (11.4)	20 (12.5)	23 (12.7)
close friend	15 (21.4)	35 (21.9)	43 (23.8)
acquaintance	6 (8.6)	14 (8.8)	27 (14.9)
other	2 (2.9)	7 (4.4)	14 (7.7)
not reported	2 (2.9)	26 (16.3)	21 (11.6)

*In 2006, data were collected only in south-east Sydney.

The risk practices reported by respondents to the Pharmacy study reveal a more risky profile than those reported by NSP survey respondents, of whom, in 2008, 18% reported receptive needle sharing and 34% reported reusing or sharing of ancillary injecting equipment (NCHECR, 2009a). The more risky profile of pharmacy-recruited respondents could be related to a range of factors, one of which may be problems of access to sterile equipment. Sterile needles and syringes are available at no cost through an NSP but must be purchased or exchanged at pharmacies. In order to acquire new equipment from a pharmacy, clients must either have money to buy it, or return their used needles. While the barriers to purchasing new equipment are obvious—clients may have inadequate finances—the barriers to exchanging equipment are less clear. Returning used equipment to the pharmacy could be difficult for clients because it requires planning, and drug use is often impromptu, or because it could signify how much they might be injecting. Clients who return a lot of used equipment for exchange might feel embarrassed or awkward about revealing to pharmacy staff how much they are injecting.

For these reasons, it is worth considering removing the requirement in New South Wales pharmacies for clients to exchange in order to obtain new, sterile equipment. Pharmacy clients could still be encouraged to return their used equipment, as NSP clients are encouraged to do, but not as a prerequisite for obtaining new equipment free of charge. The implications of such a change in pharmacy distribution methods would need careful consideration. In particular, free distribution through pharmacies might attract clientele who would otherwise

use fixed-site NSPs, and this could potentially undermine the important work NSPs have done historically in reducing the harm associated with injecting. Moreover, New South Wales is unique as the only Australian state in which people who inject can exchange needles and syringes at no cost; other states provide pharmacy distribution on a user-pays basis (NCHECR, 2009b). Any change in pharmacy distribution in New South Wales must be made carefully to ensure the continuation of a system that already provides better access than is available to users in other Australian states.

Self-reported hepatitis C testing and prevalence

In 2008 just over half (54.2%) of respondents reported having had a recent test (in the previous 12 months) for hepatitis C, and just over a quarter (25.9%) had had their most recent test more than a year ago (see Table 11). Of those who had been tested, 48.1% reported having hepatitis C infection. The proportions of those tested and those who reported being hepatitis C positive did not change significantly between 2007 and 2008 (see Table 11). While the proportion of respondents who had recently been tested was similar to that reported by New South Wales respondents to the Australian NSP Survey (55%), the proportion of pharmacy clients with hepatitis C appears much lower than the 71% of NSP survey respondents who tested positive to hepatitis C in New South Wales. The NSP survey, however, reports serological data collected through blood-spot tests, whereas data collected in the

Table 11: Self-reported hepatitis C testing and status, by year

	2006*	2007	2008	p-value
Number surveyed	229	660	602	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Had a hepatitis C test				
yes, last year	144 (62.9)	364 (55.2)	326 (54.2)	.02
over a year ago	59 (25.8)	208 (31.5)	156 (25.9)	
never tested	8 (3.5)	62 (9.4)	82 (13.6)	
unsure	10 (4.4)	11 (1.7)	17 (2.8)	
not reported	8 (3.5)	15 (2.3)	21 (3.5)	
Number who had ever had a hepatitis C test	203	572	482	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Self-reported hepatitis C status				
positive	92 (45.3)	255 (44.6)	232 (48.1)	ns
negative	102 (50.2)	239 (41.8)	177 (36.7)	
don't know	n/c	25 (4.4)	20 (4.1)	
not reported	9 (4.4)	53 (9.3)	53 (11.0)	

*Data collected for south-east Sydney only.

n/c = not calculated (because question format was different in 2006)

p-values calculated to test difference between data in 2007 and 2008; data from 2006 are not comparable.

Pharmacy survey is self-reported. There is good evidence that self-reported hepatitis C status has poor concordance with laboratory-confirmed serostatus (Best et al, 1999; Hagan et al., 2006; Stein et al, 2007), so the prevalence of hepatitis C reported by Pharmacy study respondents may be inaccurate. In any future pharmacy work, it would be useful to collect serology samples using blood-spot tests to improve the accuracy of the data. These would need to be collected in a small number of randomly selected and willing pharmacies. If the prevalence of hepatitis C proves to be lower among pharmacy clients, and given the potential for this to change as a result of the higher incidence of risk behaviours among this group, we have an important opportunity to prevent further infections.

A small proportion (13.6%) of respondents to the Pharmacy study reported that they had never been tested for hepatitis C (see Table 11), a considerably higher proportion than the 5% who reported never having had a test among New South Wales respondents to the NSP Survey (NCHECR, 2009a). However, the proportion of pharmacy clients who had never been tested varied considerably between regions; 21% of respondents from south-east Sydney pharmacies had never had a test compared with only 8% from south-west Sydney pharmacies (see Table 12). This identifies a need to improve access to testing for blood-borne viruses among those who have never been tested, as well as those who have not recently been tested. Increased rates of testing among pharmacy clients would be valuable, since knowing one's serostatus may moderate risk behaviour. It would also improve the accuracy of self-reported prevalence of hepatitis C infection in any future survey conducted through pharmacies in New South Wales.

Respondents aged under 28 years reported the lowest prevalence of hepatitis C of any age group (25.8% were

infected), and also had the highest proportion who had never been tested (25.8%) (see Table 13). Similarly, respondents who had been injecting for less than three years reported a lower prevalence of hepatitis C (6.7%) than those who had been injecting longer (see Figure 3). This shows that young users new to injecting are at particular risk for acquiring hepatitis C because they are more likely to be hepatitis C negative and do not get tested to monitor their status. Young and new injectors tend to be less knowledgeable about the risks associated with injecting, especially the possible acquisition of blood-borne viruses, than those who have been injecting for longer. They are also less knowledgeable about where to access sterile injecting equipment (Kral et al., 1999; Lum et al., 2005; Treloar & Abelson, 2005).

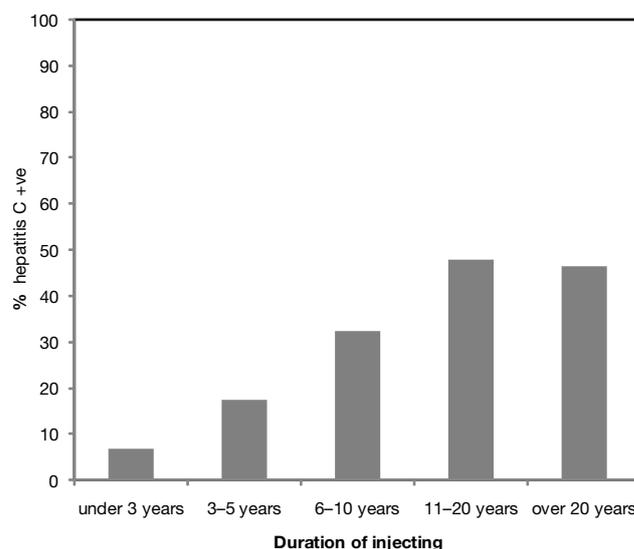


Figure 3: Self-reported hepatitis C status by duration of injecting, 2008

Table 12: Self-reported hepatitis C testing and status, by region, 2007–2008

	Sydney south-east		Sydney south-west		Sydney west		Sydney central		Newcastle/Hunter	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Number surveyed	134	143	149	138	60	28	136	128	181	165
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Previous hepatitis C test										
yes, last year	75 (60.0)	67 (46.8)	93 (62.4)	82 (59.4)	29 (48.3)	18 (64.3)	73 (53.7)	77 (60.1)	94 (51.9)	82 (49.7)
over a year ago	38 (28.4)	30 (21.0)	42 (28.2)	40 (29.0)	25 (41.7)	7 (25.0)	48 (35.3)	33 (25.8)	55 (30.4)	46 (27.9)
never tested	15 (11.2)	30 (21.0)	10 (6.7)	11 (8.0)	6 (10.0)	1 (3.6)	12 (8.8)	17 (13.3)	19 (10.5)	23 (13.9)
unsure	0 (0.0)	7 (4.9)	3 (2.0)	4 (3.0)	0 (0.0)	0 (0.0)	2 (5.5)	1 (0.8)	6 (3.3)	5 (3.0)
not reported	6 (4.5)	9 (6.3)	1 (0.7)	1 (0.7)	0 (0.0)	2 (7.1)	1 (0.7)	0 (0.0)	7 (3.9)	9 (5.4)
Self-reported hepatitis C status										
positive	49 (36.6)	47 (32.9)	59 (39.6)	63 (45.7)	24 (40.0)	13 (46.4)	58 (42.6)	56 (43.8)	67 (37.0)	57 (34.5)
negative	45 (33.6)	37 (25.9)	61 (40.9)	38 (27.5)	21 (35.0)	8 (28.6)	50 (36.8)	36 (28.1)	66 (36.5)	59 (35.8)
don't know	8 (6.0)	6 (4.2)	6 (4.0)	8 (5.8)	2 (3.3)	0 (0.0)	4 (2.9)	4 (3.1)	6 (3.3)	8 (4.8)
not reported	17 (12.7)	23 (16.1)	13 (8.7)	18 (13.0)	7 (11.7)	18 (10.9)	12 (8.8)	6 (21.4)	23 (12.7)	15 (11.7)

Table 13: Self-reported hepatitis C status, by various characteristics, 2008

	Total in each category	Self-reported hepatitis C status			
		positive	negative	don't know	not tested
Number surveyed		236	178	26	82
		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Gender					
male	391	165 (42.2)	112 (28.6)	15 (3.8)	43 (11.0)
female	205	69 (33.7)	64 (31.2)	10 (4.9)	38 (18.5)
transgender	4	1 (25.0)	2 (50.0)	0 (0.0)	1 (25.0)
not reported	2	1 (50.0)	0 (0.0)	1 (50.0)	0 (0.0)
<i>p</i> -value	ns				
Age					
under 28 years	151	39 (25.8)	52 (34.4)	8 (5.3)	39 (25.8)
28 to 34	140	68 (48.6)	32 (22.9)	10 (7.1)	14 (10.0)
35 to 42	149	60 (40.3)	51 (34.2)	3 (2.0)	15 (10.1)
over 42 years	142	64 (45.1)	37 (26.1)	1 (0.7)	14 (9.9)
not reported	20	5 (25.0)	6 (30.0)	4 (20.0)	0 (0.0)
<i>p</i> -value	< .01				
Drug most recently injected					
heroin	323	130 (40.2)	88 (27.2)	11 (3.4)	55 (17.0)
meth/amphetamine	129	41 (31.8)	48 (37.2)	7 (5.4)	16 (12.4)
cocaine	38	15 (39.5)	11 (28.9)	4 (10.5)	3 (7.9)
methadone	53	28 (52.8)	11 (20.8)	2 (3.8)	4 (7.5)
morphine	22	9 (40.9)	6 (27.3)	0 (0.0)	2 (9.1)
anabolic steroids	2	0 (0.0)	1 (50.0)	0 (0.0)	1 (50.0)
Subutex/buprenorphine	5	2 (40.0)	2 (40.0)	1 (20.0)	0 (0.0)
other*	15	4 (26.7)	7 (46.7)	0 (0.0)	0 (0.0)
not reported	15	7 (46.7)	4 (26.7)	1 (6.7)	1 (6.7)
Frequency of injecting					
more than 3 times most days	107	39 (36.4)	34 (31.8)	5 (4.7)	11 (10.3)
2 to 3 times most days	110	40 (36.4)	37 (33.6)	3 (2.7)	16 (14.5)
once a day	115	57 (49.6)	20 (17.4)	7 (6.1)	20 (17.4)
more often than weekly, but not daily	118	48 (40.7)	37 (31.4)	8 (6.8)	9 (7.6)
less often than weekly	79	38 (48.1)	20 (25.3)	2 (2.5)	13 (16.5)
not last month	44	10 (22.7)	21 (47.7)	0 (0.0)	6 (13.6)
not reported	29	4 (13.8)	9 (31.0)	1 (3.4)	7 (24.1)
Injected daily or more frequently	332	136 (41.0)	91 (27.4)	15 (4.5)	47 (14.2)
<i>p</i> -value	ns				
Duration of injecting					
less than 3 years	45	3 (6.7)	18 (40.0)	0 (0.0)	23 (51.1)
3 to 5 years	23	4 (17.4)	8 (34.8)	1 (4.3)	9 (39.1)
6 to 10 years	105	34 (32.4)	40 (38.1)	6 (5.7)	13 (12.4)
11 to 20 years	224	107 (47.8)	58 (25.9)	11 (4.9)	21 (9.4)
over 20 years	172	80 (46.5)	46 (26.7)	2 (1.2)	13 (7.6)
not reported	33	8 (24.2)	8 (24.2)	6 (18.2)	3 (9.1)
<i>p</i> -value	< .01				
Recent imprisonment (for less than 12 months)					
yes	124	62 (50.0)	27 (21.8)	8 (6.5)	9 (7.3)
no	465	172 (37.0)	151 (32.5)	17 (3.7)	72 (15.5)
not reported	13	2 (15.4)	0 (0.0)	1 (7.7)	1 (7.7)
<i>p</i> -value	< .01				
Aboriginal					
yes	120	50 (41.7)	33 (27.5)	6 (5.0)	18 (15.0)
no	468	180 (38.5)	144 (30.8)	19 (4.1)	63 (13.5)
not reported	14	6 (42.9)	1 (7.1)	1 (7.1)	1 (1.7)
<i>p</i> -value	ns				

Other includes heroin and cocaine concurrently.

Note: Percentages are calculated from denominators reported in left-hand column.

ns = not significant

Self-reported HIV testing and prevalence

In 2008 self-reported HIV prevalence was very low among pharmacy clients at 2.2% (see Table 14). This was identical to the serological prevalence reported among New South Wales respondents to the NSP survey, in which 2.2% were also found to be HIV positive (NCHECR, 2009a). As expected, rates of testing for HIV were similar to those for hepatitis C, with more than half of respondents (55.5%) having had a recent HIV test, less than a quarter (22.1%) not having been tested for over a year, and 14.6% never having been tested (see Table 14). As with patterns of testing for hepatitis C, patterns of HIV testing varied by region; 21.7% of respondents from pharmacies in south-east Sydney reported never having had a test compared with 12.7% of those in the Hunter/New England area (see Table 15).

Table 14: Self-reported HIV testing and status, 2007–2008

	2007	2008	p-value
Number surveyed	660	602	
	<i>n</i> (%)	<i>n</i> (%)	
Had HIV test			
yes, in previous year	369 (55.9)	334 (55.5)	ns
more than a year ago	164 (24.8)	133 (22.1)	
never tested	84 (12.7)	88 (14.6)	
unsure	22 (3.3)	25 (4.2)	
not reported	21 (3.2)	22 (3.7)	
Self-reported HIV status			
positive	8 (1.2)	13 (2.2)	ns
negative	469 (71.1)	395 (65.6)	
don't know	23 (3.5)	21 (3.5)	
never tested	84 (12.7)	88 (14.6)	
not reported	76 (11.5)	85 (14.1)	

ns = not significant

Self-reported hepatitis B testing and prevalence, and whether or not vaccinated

A very small proportion (4.5%) of respondents reported being hepatitis B positive (see Table 16). A considerable proportion (39.4%) reported having been recently tested for hepatitis B, but over 20% of respondents had never had a test and about 10% were unsure if they had. Just over a third of respondents (33.9%) reported being vaccinated (see Table 16).

Table 16: Self-reported hepatitis B testing and status, and whether or not vaccinated, 2008

	2008
Number surveyed	602
	<i>n</i> (%)
Had hepatitis B test	
yes, last year	237 (39.4)
more than a year ago	156 (25.9)
never tested	123 (20.4)
unsure	59 (9.8)
not reported	27 (4.5)
Hepatitis B status	
positive	27 (4.5)
negative	260 (43.2)
don't know	19 (3.2)
never tested/unsure	182 (30.2)
not reported	42 (7.0)
Vaccinated against hepatitis B	
yes	204 (33.9)
no	143 (23.8)
don't know	33 (5.5)
not reported	40 (6.6)

Table 15: Self-reported HIV testing and status, by region, 2007–2008

	Sydney south-east		Sydney south-west		Sydney west		Sydney central		Newcastle/Hunter	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Number surveyed	134	143	149	138	60	28	136	128	181	165
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Had HIV test										
yes, last year	76 (56.7)	66 (46.2)	96 (64.4)	86 (62.3)	32 (53.3)	20 (71.4)	75 (55.1)	82 (64.1)	90 (49.7)	80 (48.5)
more than a year ago	32 (23.9)	32 (22.4)	29 (19.5)	26 (18.9)	18 (30.0)	6 (21.4)	39 (28.7)	25 (19.5)	46 (25.4)	44 (26.7)
never tested	16 (11.9)	31 (21.7)	17 (11.4)	19 (13.7)	9 (15.0)	1 (3.6)	18 (13.2)	16 (12.5)	24 (13.3)	21 (12.7)
unsure	0 (0.0)	5 (3.5)	6 (4.0)	7 (5.1)	1 (1.7)	0 (0.0)	4 (2.9)	5 (3.9)	11 (6.1)	8 (4.8)
not reported	10 (7.5)	9 (6.3)	1 (0.7)	0 (0.0)	0 (0.0)	1 (3.6)	0 (0.0)	0 (0.0)	10 (5.5)	12 (7.3)
Self-reported HIV status										
positive	3 (2.2)	4 (2.8)	1 (0.7)	0 (0.0)	0 (0.0)	1 (3.6)	2 (1.5)	3 (2.3)	3 (1.7)	5 (3.0)
negative	89 (66.4)	89 (62.2)	115 (77.2)	96 (69.6)	45 (75.0)	20 (71.4)	98 (72.1)	84 (65.6)	122 (67.4)	106 (64.2)
don't know	4 (3.0)	2 (1.4)	5 (3.4)	7 (5.1)	1 (1.7)	0 (0.0)	4 (2.9)	7 (5.5)	9 (5.0)	5 (3.0)
never tested	16 (11.9)	31 (21.7)	17 (11.4)	19 (13.8)	9 (15.0)	1 (3.6)	18 (13.2)	16 (12.5)	24 (13.3)	21 (12.7)
not reported	23 (17.2)	48 (33.6)	11 (7.4)	16 (11.6)	5 (8.3)	6 (21.4)	14 (10.3)	18 (14.1)	23 (12.7)	28 (17.0)

Limitations

The findings in this report have several important limitations. Although we have some measures of the representativeness of the sample, we used non-probability sampling methods and do not know to what extent the findings can be generalised to the wider population of those who inject drugs and collect needles and syringes from pharmacies. Using our response-rate measures, we know that, in the year 2008, participating pharmacies in the five selected regions of New South Wales accounted

for 51.9% of the total distribution of sterile needles and syringes dispensed by pharmacies in general, and that participating clients represented 77% of injecting-drug-using clients at those pharmacies. Also, data are self-reported and this can lead to bias, especially when reporting sensitive or illegal behaviours (Latkin & Vlahov, 1998; Latkin et al., 1993). In particular, self-reported hepatitis C status is known to have poor concordance with laboratory-confirmed serostatus (Best et al., 1999; Hagan et al., 2006; Stein et al., 2007).

Conclusion

The findings of this study reflect the results of international research showing that the profile of people who inject drugs can vary according to their point of access to sterile needles and syringes. The data collected from clients of needle exchange services at pharmacies in New South Wales show that pharmacy clients differ in important ways from clients recruited from fixed-site NSPs, such as respondents to the Australian NSP Survey. While the demographic and drug-using profiles of both groups of clients appear similar, a larger proportion of respondents to this study than to the NSP survey reported receptive needle sharing and sharing or reusing of ancillary injecting equipment. This suggests that pharmacy clients may not be getting the needles they require to inject safely, which puts them at risk for acquiring hepatitis C.

Increasing pharmacy clients' use of sterile needles and syringes requires consideration of the range of factors—individual, social and structural—that contribute to needle sharing. An important structural barrier for clients who obtain their equipment from pharmacies may be the requirement to return used needles before being able to obtain sterile replacements free of charge. Perhaps there should be careful consideration of the possibility of abandoning this requirement, but more research is needed to fully understand the potential impacts of such a policy change. In particular, free distribution of sterile needles and syringes via pharmacies might attract clientele who would otherwise use fixed-site NSPs, potentially undermining the important work NSPs have done in reducing the harm associated with injecting. Also pharmacies in New South Wales currently offer better access to sterile needles and syringes than pharmacies in other Australian states, and it is important that this also not be undermined. Improving access to sterile ancillary equipment may be more straightforward and could be managed by including it in the pre-packaged products (i.e. fitpacks) currently distributed by pharmacies. Alternatively, a pre-packaged container of ancillary equipment could be offered with each fitpack, either free of charge, at reduced cost (if subsidised) or at full cost, as is the case at pharmacies that provide needle exchange programs in other states of Australia.

While many of our study respondents reported that they had visited both a pharmacy and an NSP in the month prior to the survey, a sizeable group reported having attended pharmacies only. This group of injectors may therefore not be captured by existing surveillance systems that recruit respondents through NSPs. Periodic surveys should therefore be conducted among pharmacy clients to adequately monitor risk behaviours and allow

appropriate intervention if necessary. The proportion who used pharmacies exclusively to obtain sterile equipment varied by region, with close to a third of respondents in some areas reporting that they attended pharmacies only. Pharmacies may therefore be particularly important providers of harm reduction services in certain areas of New South Wales, where they appear to be the sole source of sterile equipment for a considerable group of people who inject. We therefore need to better describe the harm reduction role of pharmacies in regional and less well resourced areas of the state, and identify the specific resource and training needs of pharmacy staff in these areas.

The study findings point to some specific needs of pharmacy clients. As discussed above, they need improved access to sterile needles and syringes and ancillary equipment. They also need improved access to other health services, specifically services that test for blood-borne viruses and provide treatment for drug use. About half of our respondents had not had a recent test, or had never been tested, for blood-borne viruses. A third had never received treatment for their drug use, despite their having injected for an average of 16 years, and over half of all respondents reported that they injected daily or more frequently. There is a need to better connect such pharmacy clients with appropriate services for testing and treatment, a task best undertaken by pharmacists and their staff. Pharmacy staff may therefore need to be trained in how to refer clients and to follow up those referrals. Moreover they may need to be trained in how to engage clients in the first place, since other research shows that pharmacy clients are attracted to pharmacies precisely because of the anonymity and quick transaction available there (Treloar et al., 2010). Nevertheless, pharmacy staff already counsel a substantial number of general customers about various health issues, so are well placed to provide referrals and advice to people who inject. It would be valuable to determine from pharmacists themselves what their professional training needs would be to enable them to provide effective counselling for clients who inject drugs. Finally, because many pharmacies that offer needle exchange services also conduct pharmacotherapy dosing, it would be useful to consider how the expertise of these pharmacists could be used to provide better advice and referral to needle-exchange clients. This is especially pertinent in the case of the many pharmacy clients who already have established and amicable relationships with their pharmacists, and who would value the familiarity and sense of safety inherent in receiving drug treatment from people they know and trust.

Future research directions

The findings in this report identify a number of questions that should be answered by future research.

- How does the requirement to exchange needles and syringes determine clients' use of pharmacies? In particular, how does this requirement shape risk practices for the transmission of blood-borne viruses, such as receptive needle sharing?
- What is the prevalence of hepatitis C and HIV among pharmacy clients? Would it be feasible to conduct blood-spot testing in a small number of pharmacies to determine this?
- What is the scope of harm reduction work currently conducted by pharmacists, including the provision of referrals to testing for blood-borne viruses and drug treatment services? What is the nature and quality of these harm reduction activities? How might the scope of harm reduction work carried out by pharmacists be different in regional areas of the state?
- What services do pharmacy clients need? Which of these can be accommodated by pharmacists? How do these needs differ in the various regional areas of the state?
- What are pharmacists' experiences of providing counselling and other services to their clients who inject drugs? What are their needs for professional development in order to better advise these clients?

References

- Best, D., Noble, A., Finch, E., Gossop, M., Sidwell, C., & Strang, J. (1999). Accuracy of perceptions of hepatitis B and C status: Cross sectional investigation of opiate addicts in treatment. *British Medical Journal*, *319*, 290–291.
- Black, E., Roxburgh, A., & Degenhardt, L. (2007). *NSW Drug Trends 2006: Findings from the Illicit Drug Reporting System (IDRS)* (NDARC Technical Report Number 270). Sydney: National Drug and Alcohol Research Centre, The University of New South Wales.
- Bryant, J., & Treloar, C. (2006). Risk practices and other characteristics of injecting drug users who obtain injecting equipment from pharmacies and personal networks. *International Journal of Drug Policy*, *17*, 418–424.
- Cao, W., & Treloar, C. (2006). Comparison of needle and syringe programme attendees and non-attendees from a high drug-using area in Sydney, New South Wales. *Drug and Alcohol Review*, *25*, 439–444.
- Dear, L. (1995). Negotiated safety: What you don't know won't hurt you, or will it? *Drug and Alcohol Review*, *14*, 323–329.
- Fuller, C., Vlahov, D., Carl, A., Ompad, D., Celentano, D., & Strathdee, S. (2003). Social circumstances of initiation of injection drug use and early shooting gallery attendance: Implications for HIV intervention among adolescent and young adult injection drug users. *Journal of Acquired Immune Deficiency Syndromes*, *32*, 86–93.
- Hagan, H., Campbell, J., Thiede, H., Strathdee, S., Ouellet, L., Kapadia, F., Hudson, S., & Garfein, R. S. (2006). Self-reported hepatitis C virus antibody status and risk behaviour in young injectors. *Public Health Reports*, *121*, 710–719.
- Kral, A. H., Bluthenthal, R. N., Erringer, E. A., Lorvick, J., & Edlin, B. R. (1999). Risk factors among IDUs who give injections to or receive injections from other drug users. *Addiction*, *94*, 675–683.
- Latkin, C. A., & Vlahov, D. (1998). Socially desirable response tendency as a correlate of accuracy of self-reported HIV serostatus for HIV seropositive injection drug users. *Addiction*, *93*, 1191–1197.
- Latkin, C. A., Vlahov, D., & Anthony, J. C. (1993). Socially desirable responding and self-reported HIV infection risk behaviours among intravenous drug users. *Addiction*, *88*, 517–525.
- Lenton, S., Kerry, K., Loxley, W., Tan-Quigley, A., & Greig, R. (2000). Citizens who inject drugs: The 'Fitpack' Study. *International Journal of Drug Policy*, *11*, 285–297.
- Lenton, S., & Tan-Quigley, A. (1997). *The Fitpack Study: A survey of 'hidden' drug injectors with minimal drug treatment experience*. Perth: National Centre for Research into the Prevention of Drug Abuse, Curtin University of Technology.
- Loxley, W., & Davidson, R. (1998). How rational is needle sharing to young injecting drug users? *Addiction Research*, *6*, 499–515.
- Loxley, W., & Ovensen, C. (1995). Friends and lovers: Needle sharing in young people in Western Australia. *AIDS Care*, *7*, 337–351.
- Lum, P., Sears, C., & Guldish, J. (2005). Injection risk behavior among women syringe exchangers in San Francisco. *Substance Use & Misuse*, *40*, 1681–1696.
- Miller, C. L., Tyndall, M., Spittal, P., Li, K., Palepu, A., & Schechter, M. T. (2002). Risk-taking behaviours among injecting drug users who obtain syringes from pharmacies, fixed sites, and mobile van needle exchanges. *Journal of Urban Health*, *79*, 257–265.

- Moatti, J. P., Vlahov, D., Feroni, I., Perrin, V., & Obadia, Y. (2001). Multiple access to sterile syringes for injection drug users: Vending machines, needle exchange programs and legal pharmacy sales in Marseille, France. *European Addiction Research*, 7, 40–45.
- National Centre in HIV Epidemiology and Clinical Research [NCHECR]. (2009a). *Australian NSP Survey national data report 2004–2008*. Sydney: National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales.
- National Centre in HIV Epidemiology and Clinical Research [NCHECR]. (2009b). *Return on investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia*. Canberra: Commonwealth Department of Health and Ageing.
- NSW Department of Health. *Needle and syringe program policy and guidelines for NSW 2006*. Sydney: NSW Department of Health. Available online at http://www.health.nsw.gov.au/policies/pd/2006/PD2006_037.html
- O'Connell, J., Kerr, T., Li, K., & Tyndall, M. (2005). Requiring help injecting independently predicts incident HIV infection among injection drug users. *JAIDS: Journal of Acquired Immune Deficiency Syndromes*, 40, 83–88.
- Rhodes, T., Lowndes, C., Judd, A., Mikhailova, L., Sarang, A., Rylkov, A., et al. (2002). Explosive spread and high prevalence of HIV infection among injecting drug users in Togliatti City, Russia. *AIDS*, 16, F25–F31.
- Rhodes, T., & Quirk, A. (1998). Drug users' sexual relationships and the social organisation of risk: The sexual relationship as a site of risk management. *Social Science & Medicine*, 2, 157–169.
- Riley, E. D., Safaeian, M., Strathdee, S. A., Marx, M. A., Huettner, S., Beilenson, P. et al. (2000). Comparing new respondents of mobile versus a pharmacy-based needle exchange program. *JAIDS: Journal of Acquired Immune Deficiency Syndromes*, 24, 57–61.
- Stein, M. D., Maksad, J., & Clarke, J. (2007). Hepatitis C disease among injection drug users: Knowledge, perceived risk and willingness to receive treatment. *Drug and Alcohol Dependence*, 61, 211–215.
- Strathdee, S., Patrick, D., Currie, S., Cornelisse, P., Rekart, M., Montaner, J., et al. (1997). Needle exchange is not enough: Lessons from the Vancouver injecting drug use study. *AIDS*, 11, F59–F65.
- Taha, T., Dallabetta, G., Hoover, D., Chiphangwi, J., Mtimavalye, L., Liomba, G., et al. (1998). Trends of HIV-1 and sexually transmitted diseases among pregnant and postpartum women in urban Malawi. *AIDS*, 12, 197–203.
- Thein, H-H, Denoe, M., van Beek, I., Dore, G., & MacDonald, M. (2003). Injecting behaviour of injecting drug users at needle and syringe programmes and pharmacies in Australia. *International Journal of Drug Policy*, 14, 425–430.
- Treloar, C., & Abelson, J. (2005). Information exchange among injecting drug users: A role for an expanded peer education workforce. *International Journal of Drug Policy*, 16, 46–53.
- Treloar, C., Hopwood, M., & Bryant, J. (2010). 'Does anyone know where to get fits from around here?': Policy implications for the provision of sterile injecting equipment through pharmacies in Sydney, Australia. *Drugs: Education, Prevention & Policy*, 17, 72–83.
- Weniger, B., Limpakarnjanarat, K., Ungchusak, K., Thanprasertsuk, S., Choopanya, K., Vanichseni, S., et al. (1991). The epidemiology of HIV infection and AIDS in Thailand, *AIDS*, 5, Suppl. 2, S71–85.

Appendix: Questionnaire

11. Thinking of the pharmacy that gave you this survey, can you get a free fipack from this there if you bring back a used one?

0 No
1 Yes
2 Don't Know

12. Roughly how many people have you seen over the past month, who are in your social network (friends, people you feel close to, people that you've used drugs with, had sex with, live with or hung out with, family)?

number of people

13. Of all the people above, how many of these people inject drugs, that you've seen in the past month?

number of people

14. About the people that you know who inject drugs, and that you've seen in the past month:

14a. How many of these people do you feel very close to?

number of people

14b. How many of these people do you see on a daily basis?

number of people

14c. How many of these people are men?

number of people

14d. How many of these people were born outside of Australia?

number of people

14e. How many of these people are Aboriginal or Torres Strait Islander?

number of people

14f. Do they include your:

	Yes	No
Spouse/boyfriend/girlfriend	<input type="checkbox"/>	<input type="checkbox"/>
Casual sex partner	<input type="checkbox"/>	<input type="checkbox"/>
Family member	<input type="checkbox"/>	<input type="checkbox"/>
Close friend	<input type="checkbox"/>	<input type="checkbox"/>
Dealer / customer	<input type="checkbox"/>	<input type="checkbox"/>
Acquaintance	<input type="checkbox"/>	<input type="checkbox"/>

14g. Are they all about the same age as you?

1 Most are about the same age
2 Most are older
3 Most are younger
4 A mixture
5 Don't know

P H A R M A C Y S U R V E Y The University of New South Wales

WHAT YOU NEED TO DO:

Fill out the survey. Seal it in the envelope. Give it to the pharmacy staff.

TO GET YOUR \$10: You must return this survey to the pharmacy where you picked it up **By WEDNESDAY DEC 9, 2009**

1. Are you...

1 Female
2 Male
3 Transgender

2. Do you think of yourself as...

1 Straight/Heterosexual
2 Gay/lesbian/homosexual
3 Bisexual
4 Other

3. How old are you? _____ years

4. How old were you when you first injected drugs?

_____ years
0 I've never injected drugs

5. Who do you live with?

1 Alone
2 With my partner
3 With my partner and kids
4 With my kids
5 With my parents or other relatives
6 With friends/flamates

6. Where do you live?

Postcode or suburb _____

7. Where were you born?

1 Australia
2 Other, please name _____

8. What is the main language spoken at home by your parents?

1 English
2 Other, please name _____

9. Are you...

1 Aboriginal
2 Torres Strait Islander
3 Both
4 Neither

10. Are you...

1 Employed full time
2 Employed part time
3 Unemployed
4 A student
5 On a pension and/or dole
6 Other

55. Apart from the pharmacy where you got this survey, do you know of any other pharmacies that exchange used fipacks for new ones for free?

0 No **GO TO Q57**
1 Yes

56. How many other pharmacies do you know that exchange used fipacks for new ones for free?

I know of pharmacies that exchange fipacks

57. Thinking of the pharmacy that gave you this survey, how did you learn that they exchanged used fipacks for new ones? (Tick all that apply).

1 I asked the pharmacy staff
2 Another drug user told me
3 A doctor told me
4 Staff at the NSP told me
5 Staff at another pharmacy told me
6 I saw the arrow symbol at the pharmacy
7 Other (please write out) _____

58. At this time last year (November 2008), were you getting fipacks from a pharmacy? (as best as you can remember).

1 Yes
0 No **GO TO Q60**
9 Don't remember

59. If yes, about how often were you getting fipacks from the pharmacy then?

3 more often than now **GO TO Q60**
2 about the same as now **END OF SURVEY, THANK YOU!**
1 less often than now **GO TO Q61**

60. What is the **main reason** that you are using a pharmacy **more** now?

1 I'm injecting more often now
2 I prefer the pharmacy to the NSP
3 The pharmacy is convenient to get to
4 The pharmacy is open when I need fipacks
5 I get methadone at the pharmacy so I am here anyway
6 Other (please write out) _____

61. What is the **main reason** that you are using a pharmacy **less** now?

1 I'm injecting less often now
2 I prefer to go to an NSP because needles are free
3 I prefer to go to an NSP because there are other services there
4 Using the pharmacy was becoming too expensive
5 The pharmacy I went to stopped giving out fipacks
6 Other (please write out) _____

THANK YOU FOR YOUR HELP – please seal the survey in the envelope and return it to the pharmacy to receive your \$10.

44. Have you been tested for hepatitis C?

2 Yes, in the last year
1 Yes, more than a year ago
0 Never tested **GO TO Q49**
9 Unsure **GO TO Q49**

45. Have you ever been told that you have hepatitis C infection?

0 No **GO TO Q49**
1 Yes

46. If **YES**, what is your current hepatitis C status?

1 I have hep C
2 I cleared the virus spontaneously
3 I cleared the virus with treatment
9 Don't know

47. Have you had any treatment for your hep C?

0 No treatment **GO TO Q49**
1 Yes, interferon
3 Yes, interferon + ribavirin
4 Other, specify _____

48. If yes, what was the outcome of your treatment?

1 Cleared the virus
2 Did not clear the virus
3 Did not finish treatment
4 Don't know outcome

49. Have you been tested for HIV?

2 Yes, in the last year
1 Yes, more than a year ago
0 Never tested **GO TO Q51**
9 Unsure **GO TO Q51**

50. If **YES**, what was the result of your latest HIV test?

0 Did not have HIV
1 I have HIV
9 Don't know result

51. Can you get hepatitis C from sharing needles and syringes for drug injecting?/

	No	Yes	Don't know
0 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

52. Can you get hepatitis C from sharing other equipment to inject drugs (eg tourniquet, swab, filter, spoon)?

0 1 2

53. Is there more than one type of hep C?

0 1 2

54. Does treatment always cure hep C?

0 1 2

- 14h. How long have you known them for?
 1 I've known most of them for less than a year
 2 I've known most of them for 1 to 5 years
 3 I've known most of them for 5 to 15 years
 4 I've known most of them for more than 15 years
 5 A mixture
 6 Don't know
15. Have you seen this symbol at a pharmacy?
 0 No
 1 Yes
 2 Don't know
16. What does this symbol stand for? (tick only one)

 1 The pharmacists here provide consultations about asthma
 2 This pharmacy dispenses methadone
 3 This pharmacy has a sale on herbal medication
 4 This pharmacy exchanges used needles for new sterile ones
 5 This pharmacy does a fipack survey
 6 I don't know
17. What was the **last drug** you injected? (tick only one)
 1 Heroin
 2 Amphetamine (Speed, Base, Ice)
 3 Cocaine
 4 Methadone
 5 Morphine
 6 Anabolic steroids
 7 Subutex/Buprenorphine
 8 Prescription oxydnone, oxycotin, MS Contin
 9 Other, please name _____
18. How often did you inject **last month**?
 5 More than 3 times most days
 4 2 to 3 times most days
 3 Once a day
 2 More than weekly, but not daily
 1 Less than weekly (on 1 to 5 days)
 0 Not in the last month **GO TO Q27**
19. Tick all the places where you injected **last month**.
 1 Own home
 2 Friend's home
 3 Dealer's home
 4 Street, park or beach
 5 Car
 6 Public toilet
 7 Prison/juvenile detention
 8 MSIC (Kings Cross injecting room)
 9 Commercial 'shooting' room
 10 Squat
 11 Other, please name _____
20. How often did you use a **new** sterile needle and syringe **last month**?
 4 All of the time
 3 Most of the time
 2 Half of the time
 1 Some of the time
 0 Not once during the last month
21. Tick any equipment that you used after anyone else (or used at the same time) **last month**.
 1 Spoon
 2 Water
 3 Filter
 4 Tourniquet
 5 Drug solution/mix
 0 Did not share any of these last month
22. How many **times last month** did someone else inject you after injecting themselves or others?
 3 More than 5 times
 2 3 to 5 times
 1 Once or twice
 0 None
23. How many **times during the last month** did you reuse a needle and syringe **after** someone else had used it, including your sex partner (even if it was cleaned)?
 4 More than 5 times
 3 3 to 5 times
 2 Twice
 1 Once
 0 None **GO TO Q26**
24. How many different **people** (including your sex partner) have used a needle before you in the **last month** (even if cleaned)?
 4 More than 5 people
 3 3 to 5 people
 2 2 people
 1 1 person
 0 Don't know how many
25. Who were these people? (tick all that apply)
 1 Regular sex partner
 2 Casual sex partner
 3 Close friend
 4 Acquaintance
 9 Other: _____
26. In the **last month**, have you cleaned a needle and syringe in order to use it again?
 0 No
 1 Yes
27. Have you **ever** been on these drug treatment programs?

	Yes, currently	No	Yes, in the past
Methadone	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
Buprenorphine, Subutex	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
Suboxone	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
Delox, rehab, counselling, Narcotics Anonymous	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
28. Have you done this survey already this year?
 0 No
 1 Yes
29. Have you been in prison in the last year?
 0 No **GO TO Q31**
 1 Yes
30. If **YES**, did you inject drugs in prison?
 0 No
 1 Yes
31. In the **last month**, did you buy any large barrel syringes from a pharmacy? (tick all that apply)
 0 No, none **GO TO Q33**
 1 Yes, 2.5ml
 2 Yes, 5.0ml
 3 Yes, 10ml
 4 Yes, 20ml
32. If yes, how many did you buy in the **last month**?
 1 _____
 2 _____
 3 _____
 4 _____
33. In the **last month** did you buy any of the following from a pharmacy?
 1 Swab
 2 Water ampoule
 3 Filter (such as cotton ball, sponge or wheel filter)
 4 Tourniquet
 5 Spoon
34. How many **times in the last month** did you get needles and syringes from a **pharmacy**? (including this time)
 1 Once
 2 Less than weekly (2 to 5 times a month)
 3 A couple of time each week
 4 Daily or almost daily
35. In the last month when you got needles and syringes from a **pharmacy**, how many did you **usually** get each time?
 1 _____
 2 _____
 3 _____
 4 _____
36. Of these, how many did you **usually** give away (or sell) to other people?
 0 No
 1 Yes
37. How many **times last month** did you get needles and syringes at a Needle and Syringe Program (NSP)? (places other than pharmacies that are specifically for giving out sterile needles and syringes)
 0 Not in the last month **GO TO Q40**
 1 Once last month
 2 Less than weekly (2 to 5 times a month)
 3 A couple of time each week
 4 Daily or almost daily
38. In the **last month** when you got needles and syringes from a Needle and Syringe Program (NSP), how many did you **usually** get each time?
 1 _____
 2 _____
 3 _____
 4 _____
- (please write in the number of needles not the number of fipacks)
39. Of these, how many did you **usually** give away (or sell) to other people?
 0 None, I kept them all myself
 1 _____
 2 _____
 3 _____
 4 _____
40. How many **times last month** did you get needles and syringes from a friend, acquaintance, dealer, boyfriend/girlfriend or husband/wife?
 0 Not in the last month **GO TO Q43**
 1 Once last month
 2 Less than weekly (2 to 5 times)
 3 A couple of time each week
 4 Daily or almost daily
41. In the **last month** when you got needles and syringes from a friend, acquaintance, dealer, boyfriend/girlfriend or husband/wife, how many did you **usually** get each time?
 1 _____
 2 _____
 3 _____
 4 _____
- (please write in the number of needles not the number of fipacks)
42. Of these, how many did you **usually** give away (or sell) to other people?
 0 None, I kept them all myself
 1 _____
 2 _____
 3 _____
 4 _____
43. In the **last month**, how have you disposed of your used syringes? (Tick all that apply)
 1 Returned them to the pharmacy for exchange
 2 Returned them to a needle and syringe program
 3 Gave them away to others
 4 Rubbish bin at home or someone else's home - inside a container
 5 Rubbish bin at home or someone else's home - not in a container
 6 Public rubbish bin - inside a container
 7 Public rubbish bin - not in a container
 8 Disposal in a public sharps bin
 9 Burned them or buried them
 10 Street/alley/park/beach - inside a container
 11 Street/alley/park/beach - not in a container
 12 Other